VERMONT

Agency of Transportation

Report on Spring 2006 Evaluation of Detectable Warning products installed 2003- 2005

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Produced by the Bicycle and Pedestrian Program, Local Transportation Facilities section of the Program Development Division

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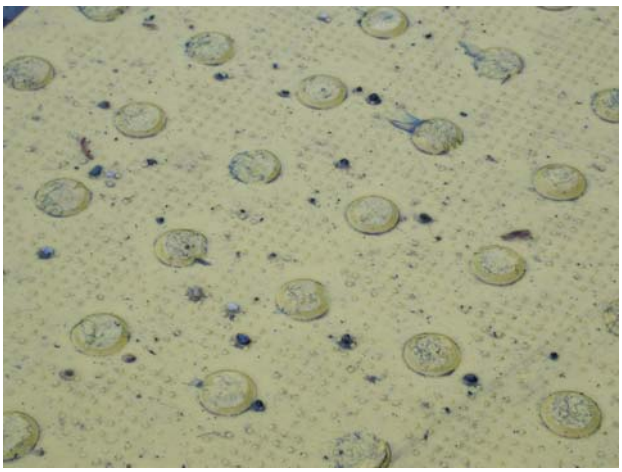
ADA Tactile Cast-in-place

This product was installed in Montpelier in the summer of 2004. It is located on the west side of Bailey Avenue where the Winooski West shared use path crosses the road.

Overall condition of this product is good. There is some damage to the panels. No evidence of separation from underlying concrete.

A few full domes are missing. The tops of quite a few domes have been scraped off.



Individual domes are chipped and broken. It is likely that many domes no longer meet the ADA standards for dome height.

Metapanel

This product was installed in Montpelier in the Fall of 2004. It is located on either side of a crosswalk that crosses the Montpelier High School driveway.

The overall durability of this product is very good. An early installation showed problems with the coating that is adhered to the stainless steel panel. The product in place incorporates a new coating process and small ridges on the domes that are intended to cause any plow blades to ride above the normal dome top.

Some of the small ridges had been removed by the plow and there are signs of complete removal of the coating, exposing the underlying stainless steel. One dome on a leading edge of the panel was partially crushed.

The integrity of the dome field was very good.

Metapanel – for asphalt substrate

This product was installed in the summer of 2005 on a reconstructed asphalt surface shared use path on Dorset Street in South Burlington.

Sand and gravel from the adjacent road and winter maintenance had accumulated between the domes on portions of the panels. The panels were in very good shape overall.

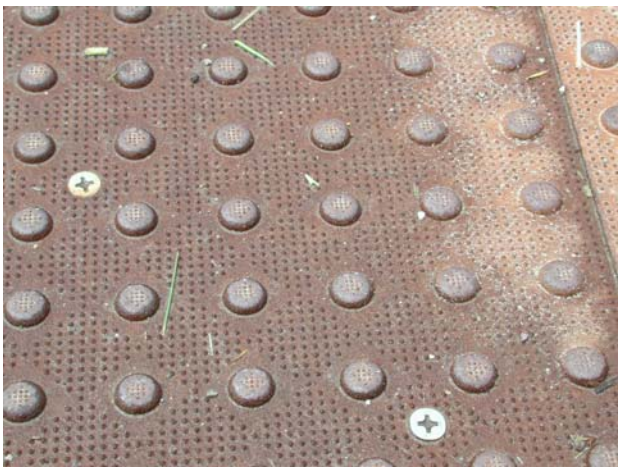
As with almost all products evaluated, the leading edge of the panel is where the majority of damage was observed.

It was noted on one of the panel installations that a void had formed under the panel, allowing it to deflect when stepped on. Installation of these panels on asphalt must be done carefully to avoid such voids. Continued deflection may cause the panel to crack over time.

Neenah Foundry

These cast iron cast-in-place panels were installed in Winooski as part of the large downtown renovation project.

The natural rust color of these panels appears to provide adequate contrast to the surrounding concrete, even when the concrete is wet.



This product showed virtually no damage from snow plows. All domes were intact.

The one feature of this product that will need to be monitored is the extent to which the rust "bleeds" onto adjoining surfaces. Some bleeding was observed on this ramp, but generally was very limited.

Vanguard

This surface applied product was installed in 2003 in Burlington off of Ethan Allen Parkway.

Large sections of the coating have been completely removed from the ramp surface.

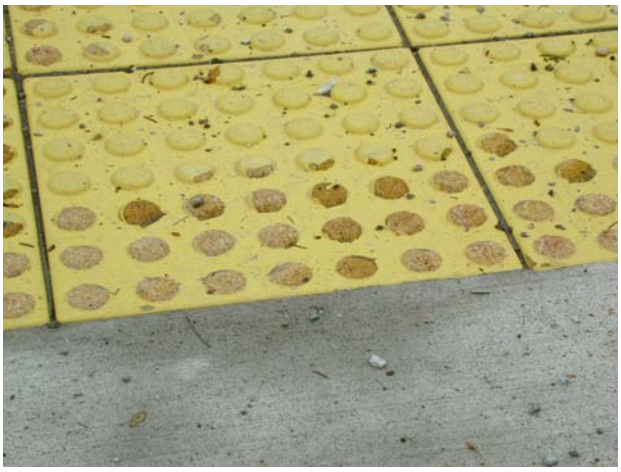
In addition to entirely missing sections, many individual domes have been removed.

Overall assessment of this product is that it has failed.

Transpo Industries – Step Safe tiles

This product was installed in 2003 on Heineberg Road off of North Avenue in Burlington. It is currently on the approved products list.

At least 50% of the domes have been lost or severely damaged. The overall condition is fair to poor. The tiles are intact and have not separated from the surrounding concrete.

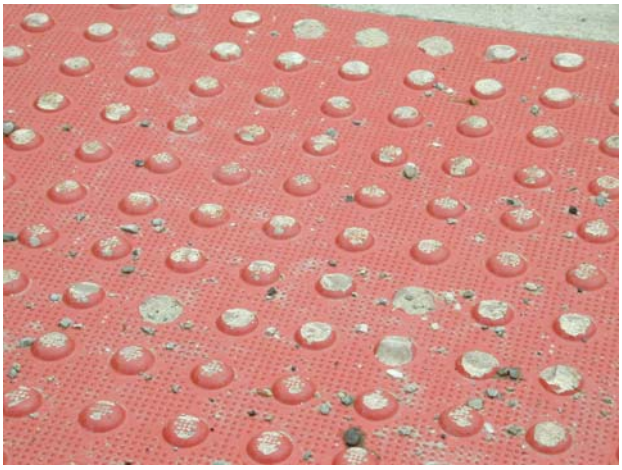


Based on the continued damage that this product has sustained each winter, it is considered to be a failed product.

Armor-Tile Cast-in-place panel

This product was installed in 2003 on Heineberg Road off of North Avenue in Burlington. It is currently on the approved products list.

The panel is adhered well in the surrounding concrete. However, at least 50% of the domes have been lost or severely damaged.



Based on the continued damage observed with this product each winter, it is considered to have failed. A three year life span for these materials is not acceptable.

ADA Tactile surface applied

This surface applied panel was installed in Burlington in the summer of 2003.

The overall condition of these panels is fair to good with some continued damage being evident.

Some small sections of panel have been completely removed and. Many dome show signs of scraping.

A number of domes have been completely removed. Based on the overall condition of this product only 3 years after installation, it will be recommended to remove it from the Approved Products list.

Alert Cast

This cast in place panel was installed in Montpelier during 2005 at the intersection of Northfield Street and Memorial Drive.

In general this product is showing minimal damage, although it has only been in place for one winter.

A few domes have been chipped or fully removed. This product will have to be monitored for one or two winters to see how well it holds up. It is expected to show continued wear like other plastic compound products.

Naviplate

This aircraft grade aluminum product was installed in Montpelier during 2005 at the intersection of Northfield Street and Memorial Drive.

The overall condition of the panel is good, yet it is showing signs of wear after one winter season.

Of most concern with this product is that where complete domes have been removed, a hole in the panel surface has resulted. This will allow water to accumulate under the panel surface and may cause problems when subjected to the freeze-thaw cycle. It is likely that this product will not be recommended for use on Agency projects.

Alert-Tile

This surface applied panel was installed in Montpelier during 2005 at the intersection of Northfield Street and Memorial Drive.

After one winter, the product is showing considerable signs of wear and exhibits a poor bonding to the substrate.

It appears that the sidewalk plow blade lifted one corner of this semi-rigid panel and broke the piece of panel off.

In addition to the wholesale removal of sections of this product, individual domes were crushed and sheared off. This product is considered to have failed.

Alert Mat

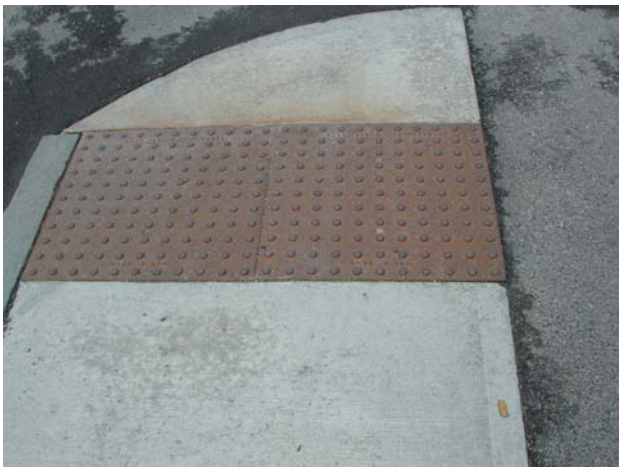
This surface applied panel was installed in Montpelier during 2005 at the intersection of Northfield Street and Memorial Drive.

This flexible product experienced almost complete removal after being exposed to one winter of sidewalk plowing, demonstrating a poor bonding to the underlying concrete.

The remaining portion of this product showed extreme fading of the color and damage to domes. This product failed.

East Jordan Iron Works

This cast in place cast iron panel was installed in Montpelier during 2005 at the intersection of School Street and Berlin Street.



These panels showed virtually no damage and all domes were intact. There was good color contrast to the surrounding concrete. Some minor bleeding of rust onto the adjacent concrete was observed.

Cold Spring Granite

This granite paver was installed on Main Street in Montpelier in the summer of 2004.

Overall, this product is in fair to good shape. The color contrast to the adjacent concrete is fair but diminishes when wet.

Approximately 25% of the domes show signs of chipping or crushing as a result of winter maintenance. It is expected that continued deterioration would take place with this product.

Armor-Tile Surface applied

This surface applied product was installed in Hubbard Street near the Union Elementary school in Montpelier in the summer of 2004.

The overall condition and appearance of this product is very good. Color has not significantly faded since its original installation. Joint seams are intact.

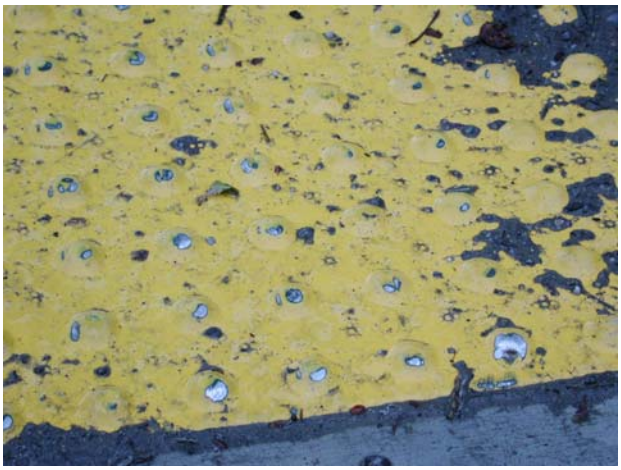
There are a few missing domes and some scraping of dome tops is evident, especially on the leading edge of the panels.

Although some continuing damage has been observed, this product is holding up well.

Advantage Tactile

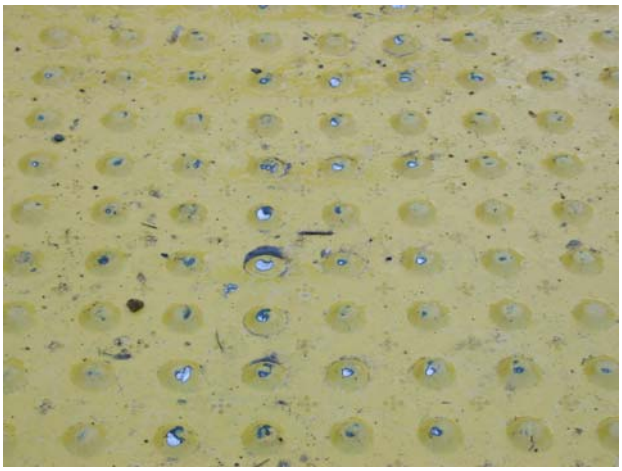
This cast-in-place stainless steel panel was installed in Montpelier off of Elm Street in the summer of 2005.

The overall condition and color fastness of this product is very good.



The panel surface is showing the impact of one winter of sidewalk plowing in that some of the coating has been removed from the panel, exposing the underlying stainless steel. Some minor dome damage was present.

The removal of surface coating was noted on some internal domes, not just the leading edge.



Truncated Dome Product Summary table

#	Product Name	Year Installed	Status on Approved Products List (APL)	Recommendation	Notes
1	ADA Tactile Cast in Place	2004	Conditional Approval	Remove from list	Long term durability in question
2	Metapanel	2005	Not on list	Add to list - conditional	Continue to observe effect of plowing on coating
3	Metapanel – asphalt	2005	Not on list	Add to list - conditional	Continue to observe effect of plowing on coating
4	Neenah Foundry	2005	Not on list	Add to list – no conditions	Appears very durable, continue observing color contrast
5	Vanguard	2003	Not on list	No change	Failed
6	Transpo/Castek Step Safe Tiles	2003	Conditional Approval	Remove from list	Long term durability in question
7	Armor-Tile Cast in place	2003	Conditional Approval	Remove from list	Long term durability in question
8	ADA Tactile Surface Applied	2003	Conditional Approval	Remove from list	Long term durability in question
9	Alert Cast	2005	Not on list	No change	Appears durable after one winter, but similar products do not hold up over time
10	Naviplate	2005	Not on list	No change	Failed
11	Alert Tile	2005	Not on list	No change	Failed
12	Alert Mat	2005	Not on list	No change	Failed
13	East Jordan Iron Works	2005	Not on list	Add to list – no conditions	Appears very durable, continue observing color contrast
14	Cold Spring Granite	2004	Not on list	No change	Time consuming installation, questionable durability
15	Armor-Tile Surface applied	2004	Conditional Approval	No change	Appears very durable for a surface applied (the only one on the list). Continue observing wear over time.
16	Advantage Tactile	2005	Not on list	Add to list - conditional	Continue to observe effect of plowing on coating